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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/863,324	05/24/2001	Mitsunori Maruyama		1377

30132 7590 05/16/2005
GEORGE A. LOUD
3137 MOUNT VERNON AVENUE
ALEXANDRIA, VA 22305

EXAMINER

CHANG, VICTOR S

ART UNIT	PAPER NUMBER
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1771

DATE MAILED: 05/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/863,324

Applicant(s)

MARUYAMA ET AL.

Examiner

Victor S. Chang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 March 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,5,6,8,9 and 13-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,5,6,8,9 and 13-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

Introduction

1. The Examiner has carefully considered Applicants' amendments and remarks filed on 3/29/2005. Applicants' amendments to claim 1 has been entered.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. Rejections not maintained are withdrawn.

Rejections Based on Prior Art

4. Claims 1, 2, 5, 6, 8, 9 and 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 63-132097 (translation submitted with IDS filed 2/3/04) in view of Mori et al. (US 5051295), and as evidenced by Applicants' admission, generally as set forth in section 4 of Office action dated 10/1/2004, together with the following response to argument.

It is noted that claim 1 has been amended to clarify the structural relations between the layers, and also recites, *inter alia*, "said heat-reactive resin being formed by radical polymerization".

For the purpose of clarification, the Examiner repeats the relied upon prior art as follows: JP '097 is directed to a transfer sheet comprising a releasing sheet (support), a cured resin layer (protective layer) of electron beam (ionization radiation) curable resin and a curable adhesive layer (claim 1 of JP '097). JP '097 teaches that the adhesive

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layer is cured after transferring by exposing to an ionizing irradiation (claim 3 of JP '097), and the suitable composition for the curable adhesive layer is the same as the curable resin used to form the cured resin layer (translation, page 2, last two lines). JP '097 also expressly teaches that the EB (electron beam) curable resin is a mixture of one or more kinds of prepolymer and oligomer having an ethylene unsaturated bond in a monomer, a monomer having an ethylene unsaturated bond, etc. Examples of the prepolymer and oligomer include urethane acrylate, melamine (meth)acrylate, etc. Examples of monomer include methyl acrylate, 2-ethylhexyl acrylate, acrylamide, etc. (translation, page 2, top paragraph). For claim 1, it should be noted that: 1) EB curing of monomer having an ethylene unsaturated bond is inherently a free radical polymerization process; 2) Applicants have specifically defined the "heat-reactive resin" as a resin comprising monomer unit which has a heat-reactive functional group, such as a carboxy group, a hydroxy group, a tertiary amino group, an amide group, etc., (specification, page 12, bottom paragraph), as such the express teaching by JP '097 that exemplary monomers include monomers such as acrylamide, etc., as set forth above, reads on heat-reactive curable resin of instant invention; and 3) JP '097 also expressly teaches that the prepolymer, oligomer, and monomers can be mixed arbitrarily to prepare a coating composition (translation, page 2, second paragraph), as such teachings of JP '097 clearly encompass an adhesive layer which is a mixture of ionizing radiation curable resin (e.g., acrylic prepolymer, oligomer, and monomer) and a heat-reactive resin (e.g., an acrylamide containing resin) which is different from said ionizing curable resin.

For newly amended claim 1, JP '07 is silent about: 1) the heat-reactive resin is an acrylic copolymer having a hydroxyl group, and 2) the heat-reactive resin has a molecular weight of 50,000 – 2,000,000. Regarding the hydroxyl containing acrylic copolymer, it is noted that Mori's invention is also directed a protective film for photo masks. Mori expressly teaches that the protective layer may be formed from any compound which is cured by irradiation (column 2, lines 33-37). Examples of curable compounds include curable photopolymerizable (i.e., ionizing curable) monomers and prepolymers, etc. These may be used alone or in combinations of two or more (column 2, lines 38-44). Examples of monomers including methyl acrylate, 2-ethylhexyl acrylate, 2-hydroxyethyl acrylate, 2-hydroxyethyl acrylate, 2-hydroxypropyl acrylate, etc. (column 4, lines 14-17); and prepolymers include polyurethane acrylates comprising a pendant hydroxyl group such as 2-hydroxyethyl acrylate (column 4, lines 57-60). As such, in the absence of unexpected results, it would be obvious to one of ordinary skill in the art to modify the irradiation curable monomers of JP '097 with known equivalent hydroxyl group containing acrylate monomers, as taught by Mori. It should be noted that the selection and substitution of a known equivalent material based on its suitability for its intended use supported a *prima facie* obviousness determination. See MPEP § 2144.07. As to the molecular weight of the heat reactive resin, since the combined teachings of JP '097 and Mori are directed to the same subject matter (a protective film transfer sheet) and for the same application (protecting a photo mask) as the instant invention, in the absence of evidence to the contrary, it is the Examiner position that a suitable molecular weight of the heat-reactive resin is either anticipated by JP '097, or

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obviously provided by practicing the invention of prior art. It should be noted that where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a *prima facie* case of either anticipation or obviousness has been established. See MPEP § 2112.01.

With respect to Applicants' argument "Even if a curable compound of Mori et al were to be incorporated into the adhesive layer of JP '097, the result would not be an adhesive layer containing heat reactive copolymer resin obtained by free radical polymerization, (and therefore not containing free hydroxyl groups)." (Remarks, page 5, bottom paragraph), the Examiner repeats (see Office action dated 10/1/2004, page 6) that while Applicants' amendment exclude the curable phosphazene compounds of Mori, Mori also expressly teaches alternative equivalent curable compounds which are formed by an inherently free radical photopolymerization of hydroxyl containing acrylate monomers, such as 2-hydroxyethyl acrylate, 2-hydroxypropyl acrylate, etc., as set forth above, Applicants' argument to the contrary notwithstanding.

With respect to Applicants' argument "polyurethane acrylate is described by Mori et al as a "prepolymer" ... would not have a molecular weight as high as 50,000 (Remarks, page 7, middle paragraph), the Examiner notes that Applicants fail to appreciate that polyurethane acrylate described by Mori is merely an optional "prepolymer" for forming the curable compounds, not formed (i.e., cured) heat-reactive resin, as set forth above. The Examiner repeats that since the combined teachings of JP '097 and Mori are directed to the same subject matter (a protective film transfer

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sheet) and for the same application (protecting a photo mask) as the instant invention, in the absence of evidence to the contrary, it is the Examiner position that a suitable molecular weight of the heat-reactive resin is either anticipated by JP '097, or obviously provided by practicing the invention of prior art.

Applicants' repeated argument that "assuming that both layers of the transfer sheet of Japanese '097 contain an ionizing radiation curable resin, given the teachings of the references, it would have made sense only to add or substitute the compounds of Mori et al into that layer which would form the outermost layer after transfer of the surface to be protected." (Remarks, pages 9-10, bridging paragraph) has been carefully reconsidered. The Examiner notes that Applicants appear to be arguing the references individually, and fails to appreciate that JP '097 expressly teaches that the suitable composition for the curable adhesive layer is the same as the curable resin used to form the cured resin layer, as set forth above. As such, clearly Mori's teachings are suitable for modifying the compositions of both layers of JP '097, because they are of the same composition, Applicants' argument to the contrary notwithstanding.

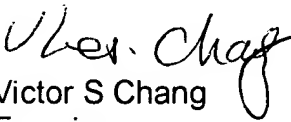
Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Victor S. Chang whose telephone number is 571-272-1474. The examiner can normally be reached on 8:30 - 5:00.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel H. Morris can be reached on 571-272-1478. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Victor S Chang
Examiner
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5/10/2005